Browser Extension to Block Trackers

Abstract

This project focuses on developing a browser extension designed to block tracking scripts that compromise user privacy. The extension identifies and prevents requests to known tracking domains, helping users maintain anonymity while browsing the internet. It also offers basic analytics, such as the number of blocked trackers and the ability to manage whitelists and blacklists for enhanced control.

Introduction

In today’s digital age, online tracking has become a significant privacy concern. Various websites embed tracking scripts to monitor user behavior and collect personal data without explicit consent. This project introduces a browser extension—'Tracker Blocker'—that automatically detects and blocks such tracking requests. The goal is to enhance user privacy and provide a lightweight, transparent, and user-friendly solution for privacy protection.

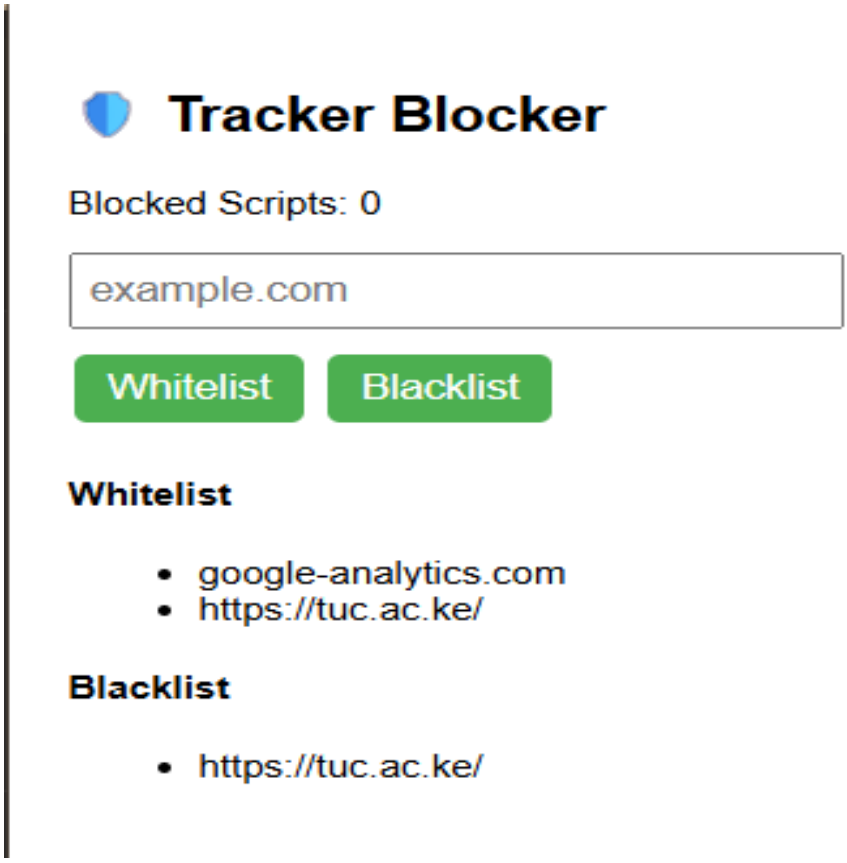
Tools Used

1. **JavaScript** – Core scripting language used for logic and handling web requests.
2. **HTML/CSS** – For building the popup interface of the extension.
3. **Manifest V3** – For defining extension configuration and permissions.
4. **Chrome/Firefox Developer Tools** – For testing and debugging the extension.
5. **DuckDuckGo Tracker List** – Used as a base for identifying known trackers.

Steps Involved in Building the Project

1. **Define Tracker Domains:** Created a JavaScript list of known tracking domains using publicly available tracker lists.
2. **Setup Manifest File:** Configured permissions such as `webRequest`, `storage`, and `webRequestBlocking` in Manifest V3.
3. **Intercept Network Requests:** Used Chrome’s `webRequest` API to detect and block requests matching the tracker list.
4. **Badge Counter & Analytics:** Implemented real-time badge updates to show the number of blocked requests, and stored blocked domains for analytics.
5. **Popup Interface:** Designed an HTML/CSS popup to display statistics, whitelists, and blacklists, providing users control over their privacy.
6. **Testing & Optimization:** Tested the extension on multiple websites to ensure compatibility and minimal performance impact.

Extension Interface Screenshot



Conclusion

The 'Tracker Blocker' extension provides an efficient and user-friendly way to safeguard online privacy by blocking unwanted tracking scripts. Through its lightweight design, customizable settings, and visual analytics, it empowers users to take control of their digital footprint. This project demonstrates how browser APIs and modern web technologies can be leveraged to create effective privacy tools for everyday users.